

AMENDMENTS TO THE CLAIMS

Please replace all previous versions of the claims with the following claim listing:

1-20. (Canceled)

21. (New) A monitoring system for monitoring a communication system, the communication system having at least a first group of nodes, each node of said first group having a plurality of channels, the monitoring system comprising:

a spectrum analyzer, the spectrum analyzer configured to test the channels of each node of said first group to obtain a plurality of channel parameters, the spectrum analyzer further configured to analyze the frequency spectrum of each node of said first group to obtain a plurality of node parameters;

a data analyzer, the data analyzer configured to receive the channel parameters and node parameters from the spectrum analyzer, the data analyzer further configured to process the channel parameters and node parameters to obtain a plurality of channel test results, a plurality of node test results, and a plurality of group test results; and

a display device, the display device configured to display a test result selected from the group consisting of the channel test results, node test results, and group test results.

22. (New) The monitoring system of claim 21, wherein the channel test results comprise at least one test result selected from the group consisting of:

a channel carrier-to-noise graph indicating a magnitude of a channel carrier-to-noise ratio of the channels associated with one of the nodes with respect to time;

a channel percent available graph indicating a percent availability of the channels associated with one of the nodes with respect to time;

a channel average noise power graph indicating a magnitude of a channel noise power of the channels associated with one of the nodes with respect to time;

a channel power graph indicating a magnitude of a channel noise power of one of the channels associated with one of the nodes with respect to time; and

a channel burst counter graph indicating a number of channel bursts occurring in the channels associated with one of the nodes with respect to a burst duration length.

23. (New) The monitoring system of claim 21, wherein the node test results comprise at least one test result selected from the group consisting of:

a channel plan graph indicating a desired frequency spectrum of a respective one of the nodes, the desired frequency spectrum including at least one frequency band associated with at least one of the channels that are associated with the respective node;

a total node power graph indicating an amount of power associated with one of the nodes with respect to time; and

a node spectrum scan indicating the frequency spectrum of one of the nodes with respect to time.

24. (New) The monitoring system of claim 21, wherein the group test results comprise at least one test result selected from the group consisting of:

a node information table listing a number of the nodes associated with said first group;

a group total node power graph indicating a power range for a number of the nodes associated with said first group; and

an average percent availability graph indicating at least a low percent availability and a high percent availability for a number of nodes associated with said first group, whereby percent availability is related to the duration of bursts with respect to a total testing time.

25. (New) The monitoring system of claim 21, wherein the data analyzer comprises control process software and graphical user interface (GUI) software.

26. (New) The monitoring system of claim 25, wherein the GUI software comprises logic to enable a user to select a test result from said group consisting of the channel test results, node test results, and group test results.

27. (New) The monitoring system of claim 21, wherein the channel parameters include at least one parameter selected from the group consisting of a start frequency, a stop frequency, a center frequency, a channel bandwidth, an average carrier power, and an average noise power.

28. (New) A method for monitoring a communication system having at least one group of nodes, each node having a plurality of channels, the method comprising:

- acquiring data obtained during a channel test and a spectrum scan test, the channel test configured to obtain channel parameters related to the channels of each node of a first group of nodes, the spectrum scan test configured to obtain node parameters of each node of the first group;

- analyzing the acquired data to obtain a plurality of channel test results, a plurality of node test results, and a plurality of group test results; and

- controlling a display screen on a display device to display a test result selected from the group consisting of the channel test results, node test results, and group test results.

29. (New) The method of claim 28, wherein the channel test results comprise at least one test result selected from the group consisting of:

- a channel carrier-to-noise graph indicating a magnitude of a channel carrier-to-noise ratio of the channels associated with one of the nodes with respect to time;

- a channel percent available graph indicating a percent availability of the channels associated with one of the nodes with respect to time;

- a channel average noise power graph indicating a magnitude of a channel noise power of the channels associated with one of the nodes with respect to time;

- a channel power graph indicating a magnitude of a channel noise power of one of the channels associated with one of the nodes with respect to time; and

- a channel burst counter graph indicating a number of channel bursts occurring in the channels associated with one of the nodes with respect to a burst duration length.

30. (New) The method of claim 29, wherein percent availability is related to the duration of bursts exceeding a specified level during a total testing time.

31. (New) The method of claim 28, wherein the node test results comprise at least one test result selected from the group consisting of:

a channel plan graph indicating a desired frequency spectrum of a respective one of the nodes, the desired frequency spectrum including at least one frequency band associated with at least one of the channels that are associated with the respective node;

a total node power graph indicating an amount of power associated with one of the nodes with respect to time; and

a node spectrum scan indicating the frequency spectrum of one of the nodes with respect to time.

32. (New) The method of claim 28, wherein the group test results comprise at least one test result selected from the group consisting of:

a node information table listing a number of the nodes associated with said first group;

a group total node power graph indicating a power range for a number of the nodes associated with said first group; and

an average percent availability graph indicating at least a low percent availability and a high percent availability for a number of nodes associated with said first group, whereby percent availability is related to a sum of burst durations with respect to a total testing time.

33. (New) The method of claim 28, wherein the channel parameters comprise at least one parameter selected from the group consisting of average noise power, carrier-to-noise ratio, low-end frequency, high-end frequency, channel frequency, channel bandwidth, high power threshold, low power threshold, and average carrier power.

34. (New) The method of claim 28, wherein the node parameters comprise at least one parameter selected from the group consisting of:

a spectrum scan measurement indicating a power amplitude versus frequency;
an average power measurement indicating an integrated power amplitude over the bandwidth of a selected node;
a channel power measurement indicating an integrated operating power of a communication device over the bandwidth of the communication device; and
a burst counter measurement indicating the number and duration of bursts above a specified power level.

35. (New) The method of claim 28, wherein acquiring data further comprises:

setting high and low alarm limits.

36. (New) The method of claim 28, wherein acquiring data further comprises:

defining a channel plan corresponding to a start frequency, a stop frequency, a center frequency, and a list of channels.

37. (New) The method of claim 28, wherein analyzing the acquired data further comprises:

comparing expected operational levels with actual measured levels.

38. (New) Control process software for controlling a display screen of a display device, the control process software comprising:

logic configured to acquire data obtained during a channel test and a spectrum scan test of a communication system, the communication system having at least a first group of nodes, each node of the first group having a number of channels, wherein the channel test is configured to obtain channel parameters of the channels of each node of the first group of nodes, and the spectrum scan test is configured to obtain node parameters of each node of the first group;

logic configured to analyze the acquired data to obtain a plurality of channel test results, a plurality of node test results, and a plurality of group test results; and

logic configured to organize the channel test results, node test results, and group test results to display a test result selected from the group consisting of the channel test results, node test results, and group test results.

39. (New) The control process software of claim 38, further comprising:
logic configured to enable a user to select the test result from the group consisting of the channel test results, node test results, and group test results.

40. (New) The control process software of claim 38, wherein:
the group test results comprise at least one test result selected from the group consisting of:

- a node information table listing a number of the nodes associated with said first group;

- a group total node power graph indicating a power range for a number of the nodes associated with said first group; and

- an average percent availability graph indicating at least a low percent availability and a high percent availability for a number of nodes associated with said first group, whereby percent availability is related to a sum of burst durations with respect to a total testing time;

the node test results comprise at least one test result selected from the group consisting of:

- a channel plan graph indicating a desired frequency spectrum of a respective one of the nodes, the desired frequency spectrum including at least one frequency band associated with at least one of the channels that are associated with the respective node;

- a total node power graph indicating an amount of power associated with one of the nodes with respect to time; and

- a node spectrum scan indicating the frequency spectrum of one of the nodes with respect to time; and

the channel test results comprise at least one test result selected from the group consisting of:

a channel carrier-to-noise graph indicating a magnitude of a channel carrier-to-noise ratio of the channels associated with one of the nodes with respect to time;

a channel percent available graph indicating a percent availability of the channels associated with one of the nodes with respect to time;

a channel average noise power graph indicating a magnitude of a channel noise power of the channels associated with one of the nodes with respect to time;

a channel power graph indicating a magnitude of a channel noise power of one of the channels associated with one of the nodes with respect to time; and

a channel burst counter graph indicating a number of channel bursts occurring in the channels associated with one of the nodes with respect to a burst duration length.